Remarks

In view of the following remarks, reconsideration and further examination are respectfully requested.

Claims 1 and 16 were previously canceled, and no claims have been added. Consequently, claims 2-15 and 17-39 are currently pending and under consideration.

The present application generally describes a unique technique and system in which the movement of a lenticular display is controlled only by drive signals generated from audio message sound signals. By allowing the audio message to generate the drive signals for moving the display, apparent synchronization can be achieved between movement on the display and the audio message. As the drive signals are generated from the audio message, the animated movement sequence of the display can be repeated as often as required to ensure synchronization for the duration of the audio message. The display need not be provided with a movement sequence in a form that matches the length of the audio message, because the drive signal is provided by the audio message, and the display is simply moved in response to the drive signal at each instant. As a result, the movement sequence on the display does not need to have the same length as the audio message. This feature is especially useful in display animations of speech. As discussed starting in the last paragraph on page 16 of the present application, "[a] further surprising feature of the invention is that the realism with which synchronisation of sound to animation is achieved is actually dependent on an idiosyncracy of human perception . . . realism of the synchronisation is enhanced by ensuring that the animation sequence is repeated and maintained for each syllable of speech in the sound sample, whereas in reality, a person's mouth will not actually close during pronunciation of certain words." This allows the display to be made more inexpensively and also means that the length of the movement sequence which can be achieved does not act as a limitation on the length of audio message which can be provided. This renders the system practically and commercially implementable, especially for novelty devices where cost is a concern.

In item 3 of the Office Action, independent claim 14 was "rejected under 35 U.S.C. 103(a) as being unpatentable over Morton in view of Lande et al." In traversal, the Applicants submit that a *prima facie* case of obviousness has not been established because the cited

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references, even when combined together, fail to disclose or suggest all of the features as recited in independent claim 14. Further, there has been shown no proper teaching, suggestion or motivation to modify the cited references in the manner that has been asserted in the Office Action to be obvious. In particular, the Applicants submit that, when properly considered, the only suggestion of the presently claimed invention is provided by the present application.

As mentioned above, the cited references even when combined together fail to disclose all of the features recited in independent claim 14. For example, both Morton and Lande et al. fail to disclose or suggest a "lenticular image being displaced by a drive mechanism actuated in response to a drive signal to allow an observer to see the animation sequence" and "wherein a combined sound and drive signal is stored in the memory of a sound chip and passed through a circuit which splits the drive signal from the sound signal for subsequent delivery of each respectively to drive mechanism and sound generation mechanism" as recited in claim 14. In item 5 of the Office Action, it was admitted that "Morton does not specifically teach the drive signal being derived from the sound signal." However, it was alleged that it "would have been obvious to a person having ordinary skill in the art to utilize the method and apparatus of Lande in a lenticular display (as in Morton) so that a realistic looking display may be created (as discussed by Lande, column 1 lines 37-38)." However, like Morton, Lande et al. does not create such a drive signal. In particular, Lande et al. relies upon the generation of a human face model graphically using imaging techniques, and the viseme and phoneme data is held as digital data. In other words, the subject matter of Lande et al. is solely in relation to the generation of a human face in a purely electronic graphics display such as that which would be generated on a computer screen or television screen. As such, the method used to generate the "talking" or movement of the display are completely different to those claimed. In Lande et al., an audio signal is used, but this audio signal is then used to change a display into a particular visual image using a complex coding system using visemes and phonemes in accordance with the international standard referred to as MPEG 4, which therefore uses a purely electronic software process. Thus, Lande et al. does not provide for the mechanical change in the visual display as in the current application, but rather, the changes are generated by purely digital software

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techniques. Consequently, Lande et al. does not disclose any type of drive signal that actuates a drive mechanism or any type of mechanism to allow the change in the display to be created.

In another example, both Morton and Lande et al. fail to disclose or suggest "wherein in that the animation sequence viewable during the motion of the lenticular image is repeated a number of times and for varying periods of time determined by the drive signal during the time that the single sound sample is reproduced by the sound generating means to give the appearance that the animation sequence is of the same duration as the sound sample and that said animation sequence is synchronised with the sound sample" as recited in claim 14. As mentioned at the bottom of page 16 of the present application:

> A further surprising feature of the invention is that the realism with which synchronisation of sound to animation is achieved is actually dependent on an idiosyncracy of human perception. The realism of the synchronisation is enhanced by ensuring that the animation sequence is repeated and maintained for each syllable of speech in the sound sample, whereas in reality, a person's mouth will not actually close during pronunciation of certain words. For example the word "actually" contains four syllables, but a person speaking this word would only close their mouth after having pronounced the word, intra-word syllables being glottally pronounced. In accordance with the invention, there may be three or four repetitions of the animation sequence of different durations so that the observer is given the impression that the character is speaking each syllable of the word.

In item 7 of the Office Action, it was admitted that "Morton (and Lande) do not specifically describe the motion of the image repeating for each syllable, etc." Nevertheless, it was purported that "this is considered to be an inherent feature since Morton teaches synchronization between the image and the sound." However, there is no inherent disclosure of such a feature. It is well settled law that, for a feature to be inherently disclosed, it must "necessarily be present in the thing described in the reference." In re Robertson, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Thus, inherency cannot be established by a mere possibility or probability that the feature exists; the feature must be necessarily present. Even assuming for arguments' sake that the device in Morton could repeat the animation sequence during motion of a lenticular image, it is still not a necessary consequence of Morton's disclosure. For instance, it

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is quite conceivable that the display in Morton would only show non-repeating animation sequences in order to present realistic animation.

Further, it is quite likely that the animation sequences in Lande et al. are in fact not repeated because the MPEG 4 encoding technique described in Lande et al. is used to generate natural animations of speech. In particular, Lande does not envisage repeating the animation sequence in the manner as recited in claim 14, because in Lande et al., each of the animation changes is dependent upon the intensity of the audio signal at that time. In other words, there are so many possible animation displays such that it is unlikely that the animation sequence would be repeated. For example, unlike the present invention, it is doubtful that the encoding technique described in Lande et al. would have the displayed character's mouth open and close for each syllable of a word. It is only in the current application that there is disclosed the provision of a visual display movement sequence which is repeated and in synchronization during the playing of an audio message so that the movement sequence does not need to be the same length as the audio message. As mentioned before, the combination of synchronized motion and sound that is provided by this repeated movement allows the synchronization to be realistically and inexpensively be reproduced. A clever feature described in the present application is that through synchronization of the audio signal with the drive mechanism of the display, the appearance of talking, or other movement can be achieved in synchronisation with the noise using only a very limited number of fixed display options, say three or four displays. It therefore has a much more crude display and audio synchronisation than that which is being sought to be achieved by Lande et al., but what is achieved in the current application is perfectly acceptable for the type of commercial implementations such as on packaging, in toys or the like. Given that the above-mentioned feature is not necessarily present in either Morton or Lande et al., this feature cannot be inherent to these references. Since both Morton and Lande et al. fail to disclose all of the features of claim 14, even when combined together, independent claim 14 is not obvious in view of these references.

In addition to failing to disclose all of the features recited in independent claim 14, the cited references fail to provide any proper motivation to arrive at the unique combination of features recited in claim 14. The only motivation to combine Morton with Lande et al. would be

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through impermissible hindsight. Specifically, the teaching of Lande et al. would not have been used with Morton, as the skilled person in the art would see no practical way of utilizing the method described in Lande et al. with the apparatus disclosed in Morton. It is submitted that one of ordinary skill in the art after reviewing the cited references would find that the system described in Lande et al. is so complex that the same could not be utilized in conjunction with the disclosure in Morton. For instance, one of ordinary skill in the art would, at most, recognize that Lande et al. does not add anything more to Morton than would, for example, the general knowledge or appreciation that the voice and lip movement is realistic when in synchronization. However, neither reference provides motivation specific enough to apply the specific synchronization techniques for use in a lenticular display of claim 14. Lande et al. teaches digital graphical imaging techniques that are generally of no use with mechanical lenticular displays. Therefore, one of ordinary skill in the art would likely consider such digital imaging techniques, like the use of viseme and phoneme data, to be incompatible with the mechanical nature of lenticular displays. For the above-discussed reasons as well as other reasons, it is submitted that independent claim 14 and its dependent claims are allowable over the references of record.

In item 3 of the Office Action, independent claim 39 was "rejected under 35 U.S.C. 103(a) as being unpatentable over Morton in view of Lande et al." However, it is submitted that claim 39 is not obvious in view of these references because they fail to disclose all of the features recited in claim 39, and there is no proper motivation specific enough to arrive at the features recited in claim 39.

With respect to missing features, both Morton and Lande et al., for example, fail to disclose "deriving a drive signal from said sound signal either in real time or prior to delivery of said sound signal to said sound generating means and delivering said drive signal to said drive mechanism to cause movement of said lenticular image" as recited in claim 39. Again, as stated in item 6 of the Office Action, "Morton does not specifically teach the drive signal being derived from the sound signal." Likewise, Lande et al. does not create such a drive signal. Specifically, Lande et al. does not provide for the mechanical change in the visual display as recited in claim 39, but rather, the changes are generated by a purely digital software technique. Therefore,

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Lande et al. does not disclose any type of drive signal that actuates a drive mechanism or any type of mechanical device to allow the change in a display to be created.

As another example, Morton and Lande et al. fail to disclose "the animation sequence viewable during the motion of the lenticular image is repeated a number of times and for varying periods of time determined by the drive signal during the time that the single sound sample is reproduced by the sound generating means such that the animation is of the same duration as the sound sample and that said animation sequence is synchronised with the sound sample" as recited in claim 39. As recognized in item 7 of the Office Action, both Morton and Lande et al. fail to expressly disclose repeating the animation sequence during the movement of a lenticular image. Furthermore, this feature is not inherently disclosed in either of these references because it is not necessarily present in either reference. As mentioned before, it is possible that the display in Morton would only show non-repeating animation sequences in order to present realistic animation, and thus, the repeating animation sequences feature would not be inherent to Morton. Likewise, Lande et al. fails to inherently show repeating the animation sequence because such a feature is not necessarily present in Lande et al. As previously noted, given there are so many possible animation displays in Lande et al., it is likely that the animation sequence would not be repeated. Since the above-mentioned feature is not necessarily present in either Morton or Lande et al., this feature cannot be inherent to these references. Since both Morton and Lande et al. fail to disclose all of the features of claim 39, even when combined together, independent claim 39 is not obvious in view of these references.

Furthermore, except through impermissible hindsight, there is no motivation to combine Morton with Lande et al. One of ordinary skill in the art would see no practical way of utilizing the complex MPEG 4 encoding technique described in Lande et al. with the apparatus disclosed in Morton. In other words, one of ordinary skill would view that Morton and Lande et al. concern incompatible technologies, in which one generates animation mechanically and the other electronically. After reviewing Lande et al., one of ordinary skill would likely be motivated to use an electronic display to generate animation, rather than a lenticular display. Furthermore, neither reference provides specific motivation to derive a drive signal that mechanically moves a

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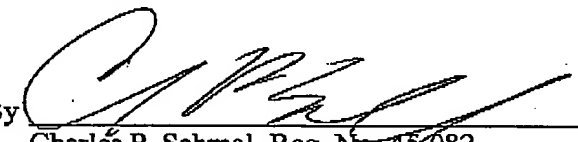
lenticular image from an audio signal. For this and other reasons, it is believed that claim 39 and its dependent claims are allowable over the references of record.

It should be understood that the above remarks are not intended to provide an exhaustive basis for patentability or concede the basis for the rejections in the Office Action, but are simply provided to overcome the rejections made in the Office Action in the most expedient fashion.

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early notice of allowance is earnestly solicited. If after reviewing this amendment the Examiner feels that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the applicant's undersigned representative by telephone to resolve such issues.

Respectfully submitted,

By 

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